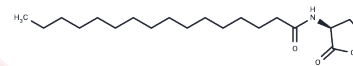


N-hexadecanoyl-L-Homoserine lactone

Chemical Properties

CAS No. :	87206-01-7
Formula:	C ₂₀ H ₃₇ NO ₃
Molecular Weight:	339.51
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



Biological Description

Description	<p>Quorum sensing is a regulatory system used by bacteria for controlling gene expression in response to increasing cell density.[1] This regulatory process manifests itself with a variety of phenotypes including biofilm formation and virulence factor production.[2] Coordinated gene expression is achieved by the production, release, and detection of small diffusible signal molecules called autoinducers. The N-acylated homoserine lactones (AHLs) comprise one such class of autoinducers, each of which generally consists of a fatty acid coupled with homoserine lactone (HSL). Regulation of bacterial quorum sensing signaling systems to inhibit pathogenesis represents a new approach to antimicrobial therapy in the treatment of infectious diseases.[3] AHLs vary in acyl group length (C₄-C₁₈), in the substitution of C₃ (hydrogen, hydroxyl, or oxo group), and in the presence or absence of one or more carbon-carbon double bonds in the fatty acid chain. These differences confer signal specificity through the affinity of transcriptional regulators of the LuxR family.[4] C₁₆-HSL is one of a number of lipophilic, long acyl side-chain bearing AHLs, including its monounsaturated analog C₁₆:1-(L)-HSL, produced by the LuxI AHL synthase homolog SinI involved in quorum-sensing signaling in <i>S. meliloti</i>, a nitrogen-fixing bacterial symbiont of certain legumes.[5],[6] C₁₆-HSL is the most abundant AHL produced by the proteobacterium <i>R. capsulatus</i> and activates genetic exchange between <i>R. capsulatus</i> cells.[7] N-Hexadecanoyl-L-homoserine lactone and other hydrophobic AHLs tend to localize in relatively lipophilic cellular environments of bacteria and cannot diffuse freely through the cell membrane. The long-chain N-acylhomoserine lactones may be exported from cells by efflux pumps or may be transported between communicating cells by way of extracellular outer membrane vesicles.[8],[9]</p>
Targets(IC ₅₀)	Others

Solubility Information

Solubility	Chloroform: 1 mg/mL (2.95 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.9454 mL	14.7271 mL	29.4542 mL
5 mM	0.5891 mL	2.9454 mL	5.8908 mL
10 mM	0.2945 mL	1.4727 mL	2.9454 mL
50 mM	0.0589 mL	0.2945 mL	0.5891 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

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